DOCUMENT RESUME

ED 023 100 CG 002 084

By-Buchanan, Paul C.

Laboratory Training and Organization Development.

New York State Psychological Association, N.Y.

Pub Date 3 May 68

Note-29p.; Paper read at a panel on "Approaches to Leader Development," New York State Psychological Association, New York, May 3, 1968.

EDRS Price MF-$0.25 HC-$1.55

Descriptors-*Behavior Change, Evaluation, Group Behavior, Interaction Process Analysis, Interpersonal Competence, *Laboratory Training, Learning Experience, Learning Laboratories, Organizational Change, Research Methodology, *Research Reviews (Publications), *Sensitivity Training

This literature review is a supplement to an earlier, extensive review by the author. It shows the increase in laboratory training methods and programs. The studies reviewed are classified as follows: methodology of evaluation, theory development, kinds of learning, factors influencing learning, participant characteristics, and laboratory training in organization development. The review indicates the value of laboratory training for facilitating personal growth and effecting successful organizational development. A need for more research in the area is also evident (NS)

FERKAUF GRADUATE SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
YESHIVA UNIVERSITY

LABORATORY TRAINING AND ORGANIZATION DEVELOPMENT

Paul C. Buchanan

Introduction

Four years ago I made a systematic review of the literature regarding "the effectiveness of laboratory training in industry" (Buchanan, 1965). From that analysis I derived the following conclusions:

(a) "that laboratory training is effective as a means of facilitating specifiable changes in individuals in the industrial setting;

(b) that it has been used effectively in some programs of organizational development, but not in others;

(c) that behavioral scientists associated with NTL are actively engaged in subjecting their theories and methods to systematic analysis, and in developing strategies for organization development; and

(d) that some of these strategies, now being studies systematically, are showing exciting payoff."

My purpose in this paper is to bring that review up to date and to answer the question, "What's going on in laboratory training?" In the course of doing this I will broaden the focus from industry to all types of organizations.

With respect to what is happening in laboratory training, it may be pertinent to mention, first off, that interest in it has expanded very significantly. For example, in 1968 National Training Laboratories is conducting 20% more sessions than it did the previous year; "sensitivity training has become an "in" activity in workshops and teacher institutes in the field of education; and the number of professionals in the NTL network has increased from 159 in 1963 to 172 today.

ED023100

CG 002 084

1 Expansion of a paper read at a panel on "Approaches to Leader Development", New York State Psychological Association, New York, May 3, 1968.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Research regarding laboratory training has also expanded. I have located 68 technical articles or books, published since my previous review, which pertain to some aspect of laboratory training [2].

Studies on laboratory training during the past four years can be classified under the following headings, and it is this classification which will be used in this paper:

1. Methodology of evaluation
2. Theory development
3. Kinds of learning which laboratories produce
4. Factors influencing participant learning in laboratories
5. Who learns from laboratory training
6. Laboratory training in organization development.

I. Methodology of evaluation

The methodology of evaluation continues to be a major barrier to the progression of manager development from an art to a technology, yet several recent studies constitute some progress.

House (no date) classified the variables relevant to the problem into four categories: objectives of the development effort; initial states of the learner; initial states of the organization; and methods for inducing change in the learner. Then, considering the developmental methods as "input variables", the objectives of development efforts as "output variables", and initial states of both the trainees and the organization as "moderators", he generated a paradigm of relationships which highlight the issues in planning and assessing development efforts. He then outlined a specific assessment design which illustrates the use of the paradigm. The result is a clear delineation of relevant types of variables and their inter-connectedness - a paradigm which is applicable to the design and assessment of any change in the "person dimension" (Leavitt, 1965) of organization performance.

2 A bibliography of research prepared by Durham and Gibb in 1960 was updated last year (Knowles, 1967). Whereas Durham and Gibb listed 49 studies during the period 1947-1960, Knowles listed 76 for the period 1960-1967.

Schein and Bennis (1965) also have published a book which intergrated much of the literatu re of the subject up to 1965; their work is undoubtedly the best single source of background information on the topic.

House's study also makes clear that neither the design nor the assessment of any training program is likely to be effective if it does not take into account variables in the situation as well as variables in the person - a finding highlighted long ago by Fleishman et al, (1955) but still often ignored. And equally important, House highlights the way in which theory can be used to enable evaluation studies to contribute to a systematic body of knowledge - again a condition which is infrequently met. However, House's paradigm is more complete in providing for moderator than for output variables; as moderators he lists "the nature of the primary work group," "the formal authority system" of the organization, and "exercise of authority by superior", yet he doesn't list these organization factors as output variables - he lists changes in knowledge, skill, attitude, and job performance of participants only. But it is on the assumption that such changes in the participant will result in changes in the output of the work unit of which the learner is a leader or member, and that this in turn will result in improved performance of the unit in the context of the larger organization, that organizations undertake training. So while Houses's work is very important as far as it goes, it omits some important variables.

While House dealt with what we might call problems of strategy of design and evaluation, Harrison (1967) has made a thoughtful analysis of problems in the tactics of evaluation. He discusses the following problems:

1. It is seldom possible to assign relevant members randomly to the "treatment" and a comparison or control group. In most laboratories which are conducted, participants are either self-selected, or are assigned for administrative or other organizational reasons (the personnel officer wants them to attend, they are part of a unit which is to participate, etc.), and in assessment studies which use them, the comparison group is usually selected post hoc and with little information available regarding their similarity to the treatment group. (For example, in Bunker's studies (Bunker, 1965, and Bunker and Knowles, 1967) control subjects were nominated by participants and there are no data regarding the basis of this nomination, what experiences the controls had during the period covered by the assessment, or why the participants attended the laboratory and the controls hadn't.) In the studies reviewed in this paper, there are only three which appear to meet requirements for a treatment-comparison-group design - Deep and Bass (1967); Schmuck (1967) and Johnson, Hanson, et al, (1965).

But there is an additional difficulty in using a control group which Harrison discusses - the fact that being a member of one or the other influences expectations and thereby introduces bias if perceptions of behavior are used as criteria (such as in the Miles-Bunker-Knowles procedure).

Because of these difficulties, Harrison encourages (and utilizes) assessment designs which examine the relation between (predicted) processes of training and outcomes from training.

2. When should "post-measures" be taken if one is to obtain a good picture of training impact? As Harrison points out, until one knows the pattern of impact he doesn't know what kinds of changes to look for when. For example, the main immediate effect may be uncertainty, discomfort, and experimentation, which then give way to confidence, new behavior patterns, and stabilization; if this is the case, measures taken only at the end of the training will be highly misleading.

3. Related to the above issue is that of whether assessment should focus on predicted and/or desired outcomes (what Harrison calls a normative approach), or should be more like a net "to catch whatever fish happened to be in the water" (my phrase). Harrison also discusses difficulties in assessing change on metagoals of laboratory training.

4. Due to variability in interventions which are called laboratory training there is the difficulty in specifying and applying an intervention which can be replicated or meaningfully compared with other training methods. As Harrison says, "...we do not yet have adequate enough theory about the effects of different elements of training design even to permit us to classify laboratories according to design." (p.6)

Harrison also called attention to some statistical problems in assessment studies but did not attempt to offer suggestions. His paper is clearly worth study both by people planning assessment studies and those who interpret findings from those reported.

Miles, who for many years has been an innovator of evaluation designs, conducted a study several years ago (Miles, 1965a, 1965b) which met many of the requirements of House's paradigm and Harrison's emphasis on examining process variables. More recently he and his associates have carried this approach further by using theory in formulating intervention strategies and increasing the rigor of assessment designs (Miles, Milavsky, et al, 1965; Miles' Calder, et. al, 1966; Benedict, Calder, et. al, 1967). This method, called

a "clinical-experimental approach," has five components: (1) it calls for a clear division of labor between the researcher's responsible for assesment, and the change agents responsible for helping the client; (2) data are collected both clinically (natural-history running account of events before, during, and following the interventions) and "experimentally" (by pre-planned and periodic measurements of the target and a comparison group; (3) the investigators make theory-based general predictions regarding the impact the interventions are likely to have on specific variables of the organizations; (4) the change agent obtains information from the client, and on this basis formulates specific interventions, then makes "short-range" predictions regarding the variables which the intervention would effect; and (5) careful attention is given to the tactical assessment design - Miles uses a multiple-time-series design involving target and comparison groups and several post-intervention measurements. In the study reporting their attempt to use this design (Benedict, Calder, et al) they were not completely successful in meeting their "methodological prescriptions"; problems arose around keeping the research and change agents staffs from influencing each other (especially via exchange of data), and there was questionable similarity between the target and the comparison groups - there is as yet no adequate scheme for classifying school systems, and the particular "state of health" and the nature of on-going events in the two systems make it difficult to attribute any differences in pre-post measures to the interventions. Even so, the approach Miles and associates used represents a major improvement in evaluating change efforts.

Another study which is of special significance due in part to the fact that it exploited the availability of two large "live" organizations with known similarity and with known "states of health" is that reported by Marrow, Bowers, and Seashore (1967). As in Miles' design, the change agents and the researchers constituted two separate teams. Measurements of human factors and management practices were taken on a repeated basis in both the target and the comparison organizations. In addition, "hard" data were also obtained and systematically analysed in relation to both short-range and longer-range impact on a number of variables. 3

3 Further elaboration of the measure used is provided in Likert's new book (Likert 1967).

Greiner's study of a grid-based organizational development project is another example of methodological advance, in that the researchers were not part of the change agent team, there was considerable study of intervening variables which linked intervention to output, and information was obtained regarding conditions which preceeded - and in fact which apparently led to - the intervention (Greiner, 1965 -- Blake Mouton, et al, 1964.)

Many studies covered in this review have attempted, as Harrison and House suggest, to examine hypothesized relations among independent, intervening, and dependent variables (Rubin, 1966; Harrison, 1965; Kolb, et al, pending; French, et al, 1966; Deep Bass and Vaughan, 1967; and Friedlander, 1967.) Yet many are non-theoretical in that the rationale connecting the intervention with the measured outcome is not specified (Bunder and Knowles, 1967; Byrd, 1967), and equally important many do not provide theoretical links between the expected change and improvement in back home performance. As already mentioned, in very few of those which utilize comparison groups are participants assigned on a random basis.

Several use retrospective perceptions of participants and their associates as the source of information (Bunker, 1965; Bunker and Knowles, 1967.) However, use of pre and post responses to questionnaires as an alternative to retrospective judgement also presents difficulty. One problem is that the standard of reference used by the respondent may itself be influenced significantly by the intervention. This is clearly illustrated in some data reported by Blake and Mouton (1968). Their grid-seminar requires participants to rank their own grid styles before and at the end of the seminar, and one of the expected outcomes from the seminar is to increase the participants' use of the "9,9" style. Their data (p.52) from pre and post measures show a <u>decrease</u> of around 40 in the percentage of participants who see themselves having 9,9 as their most characteristic style. And it is a common experience, in groups where questionnaires are used to help the group diagnose and assess its progress for the ratings on, say, openess, to find no increase or actually a decrease at the same time that members state (and demonstrate) that they are becoming more open with each other.

Then there is the problem of "test sensitization" which can influence the responses of a comparison group. In interpreting his data, which revealed a decrease in effectiveness of the comparison group, Friedlander (1967) notes:

> "The first administration of the (Group Behavior Inventory) queried comparison group members with blunt questions on sensitive issues which they were unprepared to confront at that time. But after six months of observing those inadequacies that did occur, expectations and standards of the leadership role became clearer. Since current leadership practice did not conform to these expectations, comparison groups members now perceived significantly greater inadequacies in the rapport and approachability of their chairman." (p. 305-6)

To the extent that a decrease occurs in the post responses of the comparison group, statistically significant differences between the trained and the comparison group will lead to invalid conclusions regarding the impact of the training upon the trained group. (They will look better due to decrease in the comparison group). It appears that measures involving perceptions, whether pre-post or retrospective, are subject to error, and greater effort to devise other kinds are much needed.

Some additional shortcomings in the design of the assessment studies covered in this review are the following:

1. In several evaluation procedures changes which are noted are given equal weight, even though they appear to vary substantially in importance (i.e., "listening more" in equivalent in the scoring system to "conducts more effective staff meetings").

2. It is difficult to compare the results from one study with those of others since the training programs being evaluated vary in length, in the specific design, in the occupational mix of participants and in the age and sex of participants; and the studies vary in the variables on which change is measured, the instrument used to assess change, in a given variable, and the time at which post measures are gathered. Thus a body of self consistent knowledge is slow to develop.

3. In studies where laboratory training is one part of an organization development program (Blake and Mouton, 1968, Marrow, et al, 1967. Miles, et al 1966) it is difficult to know how much any change which was accomplished was due to the laboratory training and how much to other circumstances and interventions (Greiner, 1967).

One must conclude, then, that even though much work has been done to devise more effective ones, the major shortcomings in evaluation designs have not been overcome.

This means that the findings summarized below result from weak studies.

II. Theory Development

In 1964 NTL published a book in which eight Fellows of NTL presented their views of "the present status of T-group theory". A primary concern in these papers was to account for what happens in a T-group. Several important theoretical papers dealing with this issue have appeared since that time.

Hampden-Turner (1966) developed "an existential learning theory" which he used to intergrate findings from three empirical studies of T-group effectiveness. His theory involved a "developmental spiral" where the participant's initial quality of cognition, clarity of identity, and extent of self-esteem result in an ordering of his experience which, in the context of a T-group, leads to his "letting go" and risking his competence in interacting with another person and in which the reaction of the other leads him to a new intergration of his experiences which leads to changes in the quality of his cognition, clarity of identity, and extent of self esteem, and a repetition of the cycle, etc. Harrison (1965) formulated a "cognitive model for interpersonal and group behavior" which was intended as a framework for research - and indeed he has used it as a basis for composing training groups (Harrison and Lubin, 1965) and for designing laboratories (Harrison and Oshry, 1964). In the tradition of George Kelly's "psychology of personal constructs", Harrison sees learning resulting when the participant's ways of construing events are "up-ended" by confrontation with participants holding different constructs and when the participant feels sufficiently supported by others that he is able to work through the consequences of the up-ending, conditions which can be met if the participant has both a battleground (in the form of the members holding contrary views from his own) and a castle (in the form of others who agree with him). This theory has clear value as a basis for designing training experiences, and there is considerable support for the belief that the type of learning (change) it emphasizes is important. [4]

See for example:

4 Harvey's work on the differences in behavior of people who are high on abstract (vs. concrete) thinking, a dimension which appears to be compatable with Harrison's emphasis on change in cognitive structure. (Harvey, 1967).

Argyris (1967) stated a theory of individual learning from which he derived implications for designing laboratories.5 for training [illegible].

Argyris also utilized his theory to identify variables in terms of which change can be assessed, he devised measures of these variables, and he tested out his theory (Argyris, 1965), Clark and Culbert have hypothesized that self-awareness develops as a function of mutually-congruent therapeutic relations between participants and trainers (Clark and Culbert, 1965; Culbert, in press). Schein and Bennis (1965) have set forth "a theory of learning through laboratory training" which consists of a cyclical interplay of a dilemma or disconfirming experience, attitude change, new behavior, new information and awareness, leading to additional change, new behavior, etc.

Smith (1966) formulated and tested a complex theory of learning based on Kelman's model of influence. (The results of this study are presented below.) Bass (1967) made a critique of T-group theory and concluded that the kinds of learning emphasized can be dysfunctional to job performance; as partial evidence for this view he cites a study (Deep, Bass, and Vaughan, 1967) in which he found that intact T-groups (of the instrumented variety) performed less effectively on a business game than did groups composed of members from different T-groups.

Partly as a continuation of an emphasis on learning-about-self which has long characterized the Western Training Lab, and partly in response to the demand by alumni for advanced courses, "personal growth laboratories" have become an important part of both WTL and NTL. In these laboratories the T-group is the primary - and sometimes the only - structure, with music, physical movement, expression in varied media, and phantasy included, and with lectures, group-oriented learning, and skill practice ommitted(Tannenbaum and Bugental, 1963; Bugental and Tannenbaum, 1963; Schutz, 1964.) Some trainers who conduct these sessions are concerned with personal growth as an end in itself (Schutz, 1967).

5 For reactions to Argyris' criticism from several NTL Fellows, see the pages following his article in J. Appl. Beh. Sci. (1967, 3 (2)). That issue of the Journal should disspell any beliefs that NTL has become "fat and happy" as a result of its present rapid growth and popularity.

Others hold that laboratories focusing only on personal growth are the most useful ones for helping the participant become more effective at work. (Schutz, 1964, Tannenbaum, 1967, Medow, 1967).

Thus there are currently three types of laboratories: those with primary emphasis on personal growth; those with emphasis on group processes and personal growth; and those in which the T-groups are "instrumented."

Several people have formulated systematic theories regarding the use of laboratory training in improving the functioning of organizations. Perhaps the most important are those of Blake and Mouton (1964, 1968) in regard to industrial organizations, and Miles and associates (1966b) in regard to schools. The new book by Blake and Mouton (1968) deals wholly with their plan for organizational development and with guidelines for implementing it. While the basic concepts it presents are not new - it appears to be very similar to planned change as conceptualized by Lippitt, Watson, and Westley, - its value, I think, lies in its technology: Blake and Mouton have devised concrete and theoretically sound methods for implementing the strategy.

Miles and associates build upon the survey-feedback strategy of planned change, and are making a special effort to determine empirically the way in which intervention, (or input), intervening, and output variables are inter-related, especially in school systems.

Several other writers have formulated theories about organizations which are congruent with the values of laboratory training and which emphasize laboratory training as a means of improving the functioning of organizations (Shepard, 1965; McGregor, 1967: Bennis, 1966: and Davis, 1967). Schein and Bennis also have some important things to say about the place of laboratory training in organization development, (1965).

Greiner speculates systematically regarding "antecedents to planned change", asking why the Blake-Mouton interventions had the impact they did. He was able to identify "how the consultants made use of roots put down in the unplanned stages many years before (the beginning of the consultant-planned change) to build top management support for Managerial Grid training," and he relates to these historic roots specific events which occurred during the organization development program. His study thus integrates imaginative observation, survey findings, and theory derived from a variety of related fields into a coherent - and I might add, non-polemic - theory of organization change. And he emphasizes the

importance of the historical development of an organization in attempts to change it, a conclusion also reached by Sarason (1966) in his statement that the outcome of a current change effort is highly influenced by the outcome of earlier change efforts. Failure to cope effectively with the organization's earlier experiences with change was also considered to be one of the reasons for the limited impact of a change project in which I have recently been involved (Buchanan, 1968).

From this brief overview of recent theoretical developments it appears that primary focus has been on the ways an individual learns in T-groups, and on processes of planned organizational development. Much less attention has been given to the processes of group development. I found only two studies (Lakin and Carson, 1964; Psathas and Hardert, 1966) which attempt to explore patterns of group development.

III Kinds of learning which laboratory training produces

In summarizing findings from studies of laboratory training it seems appropriate, first, to consider "does lab training fade out?" Two studies bear on this question. Schutz and Allen (1966) gathered information on FIRO-B from 71 participants (and a control group) at the beginning, end, and six months after a two-week laboratory; they found that participants changed during the training and that the changes continued afterward. Harrison (1966) collected information from 76 participants at the beginning, a few weeks after, and a few months after they took part in a Bethel laboratory; he concluded that there was a change in the predicted direction at both follow-up periods but that the difference became significant only between the end of the training and the second follow-up measures. Thus the training appeared to be progressive. These findings are consistent with those of Bunker and Knowles who found significant change in participants (as compared with a comparison group) ten to twelve months following training, and by Morton and Bass (1964) who in a study of 97 participants found marked increase in motivation to improve their performance at the end of the laboratory and substantial changes in job performance in a follow-up 12 weeks later, and by French et al (1966) who found further changes in participants' self-concepts following the laboratory.

The next question to be explored is "what is learned?" On this it is difficult to categorize the findings since it is rare that researchers look for the same results, and when they do they typically use different measures. 6

6 An exception is the retrospective "behavior change description questionnaire" developed by Miles and Bunker and used in at least three studies.

I have made a rough categorization as follows:

"Rubbing off the rough edges." Two studies produce findings, similar in this respect to an earlier one by Boyd and Elliss, which suggest that laboratory training changes people selectively, depending upon their personality. Schutz and Allen (1966) found that (as measured by FIRO-B) "overly" dominant people became less dominant, while "overly" submissive people became more assertive. Using the same instrument, Smith (1964) found that his experimental subjects (108 students in 11 training groups) changed significantly more in the direction of a better match between what they expected and what they wanted on both the control and the affection scales of FIRO-B. Some of the findings of Bunker can also be interpreted as an indication that reduction of abrasive or otherwise undesirable behaviors occurred.

Such studies as the above raise the possibility that laboratory training produces "conformists" but Kassajian (1965) found no change in laboratory participants on an instrument which purported to measure other-directedness.

Openness, receptivity, awareness, tolerance of differences.

This is the category in which change is most consistently found following laboratory training (and is of course, one of the most commonly stated objectives). Such change apparently results even from short laboratories. In the studies covered in this review, those by Bunker and Knowles (1967), Morton and Wight (1964) Rubin (1967) Morton and Bass (1964), Schutz and Allan, 1966, Smith 1966 and by Kolb, et al (pending) report this kind of learning. I would expect this to have occurred also in the other studies, but the measures used did not pertain to this kind of change.

Operational Skills. This category includes behavior like listening, encouraging the participation of others, use of new techniques, solicitation of feedback, etc. Outcomes of this sort are reported by Bunker and Knowles (1967), Schutz and Allen (1966), Morton and Wight (1964), Sikes (1964), De Michele (1966), and Schmuck (1967).

Because of its design, the study by Schmuck is worth further comment. He studied a four-week laboratory for 20 classroom teachers, where the design included T-groups, problem solving exercises, and practice in using instruments and procedures for diagnosing classroom problems. Then before the lab ended each teacher formulated specific plans for how she would apply what she had learned during the

coming year. Follow-up meetings were held bimonthly from September through December. With another set of teachers from the same large school system (and apparently with random assignment of teachers to the two groups) he met weekly from September to December, covering the same material as in the laboratory except for the T-group work (and of course with much less total time). He found sizeable differences in the number of practices the participants tried out in their classrooms (5 to 17 by laboratory participants compared with 1 to 2 by the seminar participants), and in the esprit de corps among the teachers as indicated by the contacts they made with each other during the fall. What is more significant, he demonstrated that the teachers' learning was felt in the classrooms; he found a substantial and highly significant improvement in the classrooms of the laboratory participants, as compared to both the seminar participant and a small control group, in that the students perceived themselves as having more influence in the class, as being better liked and an intergral part of a friendship group in the class, and in being helpful to each other.

Cognitive style. Examples of this type of outcome are findings by Blake Mouton and Sloma (1966) that union and managerial participants reflected predicted differential shifts on a managerial grid questionnaire; Harrison (1966) found shifts - on the Role Reportory Test - from the use of concrete-instrumental toward inferential-expressive modes of thought; and Oshry and Harrison (1966) found that many laboratory participants viewed their work environment more humanly and less impersonal, saw themselves more as a significant part of their work problems, and saw more connection between how well interpersonal needs were met and how well work gets done.

To round out the picture regarding the impact of laboratory training, one should note that in some studies changes which were expected were not found. Bowers and Soar (1961) found no differences between 25 teachers who took part in a three week, half-day training session and a control group with respect to their use of group processes in their classrooms during the following academic year. (But compare this with Schmuck's findings reported above; Schmuck found significant carry over into the classrooms, but his intervention consisted of 4 full weeks with systematic follow-up during the fall.) Bunker (1965) found no differences between his laboratory participants and controls regarding initiative and assertiveness. Sikes (1964) failed to find predicted difference between laboratory graduates and a comparison group in their accuracy in predicting the responses of other members in a discussion group. And Oshry and Harrison (1966) predicted but did not find significant changes in sensitivity to the interpersonal needs of others or in the importance attributed to the interpersonal needs of others as a factor in back-home problem situation.

How important are the kinds of changes which laboratory training produces? It seems that to answer this, one has to add "...important for what?" There is clear evidence that personal growth results for most participants - they feel better about themselves, have new insights, and consider the training as one of the memorable experiences of their life. Furthermore, participants continually report improvement in their family relations as a result of the experience (as an example, see Winn, 1966). When it comes to changes in job performance, however, the value of the laboratory experience is less convincing - if it is to stand by itself. Fewer rough edges, greater openness and awareness, increased operational skills and a broadened view of things seem small compared to the powerful forces which maintain a status quo in organizations. But what such change does represent is an increased readiness for "nezt steps" - an issue to which we turn in a later part of this paper.

IV Design factors which influence learning outcomes

Several recent studies deal with factors which increase the extent of member learning from laboratory training. (Others concerned with optimizing the payoff from laboratory training as part of organization improvement efforts will be discussed in a leter section of this paper.)

Perhaps the most clear-cut results have emerged regarding the effects of group composition. This has been examined in terms of personality, and organizational membership of the participants. With regard to personality factors, Harrison (1963) theorized as follows:

> The process of learning is best facilitated when the individual is placed in a learning situation where either the structure produces dissonance or a significant number of others will act, feel, and perceive in ways which create sharp, clear dissonance for the learner or are contrary to his values. The dissonance must, however, be meaningful to the learner in that the alternatives presented by the others have some anchoring points within his current cognitive systems regarding himself and his interpersonal relationships. ...we propose that a degree of polarization be created on important issues within the group. This polarization provides the battlefield on which learning by the explorations of opposites can take place.

> "However, if the individual is exposed only to confrontation and dissonance, he is apt to react in extreme ways. ...For our learning model to operate, the individual should find in the group some relationships which serve as a refuge and support. Persons with similar cognitive sustems, values, and perceptions can provide this support and protection against the destructive effects of a purely confronting experience. This supportive climate is the castle in our analogy." (p. 418-9).

After reviewing relevant literature, Harrison concluded that personality variables relevant to obtaining his conditions in the formation of groups were of three types: activity-passivity, high-low affect, and negative possitive affect. He found empirical confirmation of his theory, in that groups homogeneous or mixed on one or more of these variables differed predictably in the way the groups functioned and in the nature of member learning. More specifically he concluded that:

"1. Learning is facilitated by a group climate which provides support for one's cognitive, emotional, and behavioral orientation and at the same time confronts one with meaning alternatives to those orientations.

"2. Group climate can be manipulated by relatively crude selection procedures,...

"3. The models and the research findings reviewed here can be applied to the diagnosis of wide ranges of interpersonal learning difficulties and to the design of learning groups which will provide favorable conditions of support and confrontation." (p. 431)

A study by Smith (1966) (which was conducted since Harrison's review) seems to support Harrison's findings regarding the importance of personality mix of participants.

With regard to composition based on differences in organizational membership, Morton and Wight (1964) report some interesting findings. They conducted three instrumented laboratories within a company with groups composed in such a way that in six of the D-groups (that is what T-groups are frequently called in instrumented laboratories) all participants were from one department and all members had direct superior-subordinate relations with others in the group, while participants in the other six D-groups did not have direct superior-subordinate relationships and were from scattered units of the plant. The three laboratories were

conducted according to the same design. On the basis of critical incidents [7] obtained from 90% of the participants three months after the laboratories, Morton and Wight concluded that

1. "Participants from the more homogeneous groups reported a significantly greater proprotion of critical events,

2. "In areas of personal responsibility, such as supervisor responsibility for his subordinates, his responsibility for individual problem solving, for...listening, ...and sensitivity for what was taking place, there was no significant difference in the frequencies with which incidents were reported...

3. "..., when the problems exceeded the limits of the customary personal responsibility and involved the kind of responsibility that results in highly effective team working relations, the homogeneous ...groups far exceeded the heterogeneous trained groups in the frequencies with which these critical incidents were reported."

4. "The post-training activities of the participants have led them into some difficulties. The nature of the difficulties have varied with the homogeneity of the groups. Those who trained in the less homogeneous groups are reporting less accomplished and more resistance of a personal nature. The members of the homogeneous groups, ...are reporting the greatest number of organizational barriers to applying what they have learned. Whereas the heterogeneous trained groups found their greatest barriers within their primary work group, among those who have not been in the training, the homogeneous trained group report their greatest difficulty in problem solving with those out side their department who have not received training." (p. 35-56).

These strike me as important and interesting findings. However, they must be considered as tentative, since several variables other than the D-group composition could account for the differences between the two types of groups. For example, the report does not make clear the circumstances under which so many members from one department participated in the laboratories; and it may have been the supervisor's

7 "anything that has happened since the laboratory which would not have occurred had their been no training".

enthusiasm rather than the D-group composition which accounted for the change. It is also possible that the differences in outcome occurred because many people from the same department had a similar training experience (i.e., participated in a laboratory) rather than that they were in the same D-groups.

A third variable apparently making a difference in learning outcome is length of the laboratory. Bunker and Knowles (1967) compared the outcomes from four summer sessions held at Bethel, two of three weeks and two of two weeks duration. They found that "...The three week laboratories fostered more behavioral changes" than the two week ones. More participants in the three week ones made changes "toward more pro-active and interactive behavior", while changes made by the two week participants were in the area of increased receptiveness (i.e., listening, sensitivity, etc.) However, the authors note that the two-and three-week laboratories were similar in the amount of time spent in T-groups but differed substantially in the time devoted to back-home problems; thus the differential impact could be due to the design, or interaction between the design and length, rather than to length alone. Since almost every study indicates that the trained group shows change, it would seem that the question of length merits much study - since costs are so closely related to length.

Trainer Behavior as a variable in outcomes has also been examined. Interaction effects between trainer and member orientation on the FIRO-B questionnaire were found to have differential impact upon the "laboratory learning climate" (Powers, 1965) and upon kinds of learning (Smith, 1966). Bolman (1968) also studied the relation of trainer behavior (openness, congruence, and consistency, as judged by participants) to member learning; while the results were inclusive he succeeded in isolating dimensions of trainer behavior and a way of measuring them. Culbert examined the differential impact of "more" and "less" self-disclosing trainer behavior in two T-groups; while he found that the trainer behavior differed as planned, the groups attained the same level of self-awareness.

Several studies have been conducted to examine the effects of goal-setting and feedback. Kolb and associates (Kolb, Winter and Berlew; Winter, Griffith, and Kolb) introduced into T-groups a procedure by which each member set a specific change goal for himself and was encouraged to work to meet his goal; then they varied the amount of feedback received during the training, and they attempted to heighten member commitment to the goals each set. They found that differences in both extent of commitment and in amount

of feedback influenced learning. French, et al (1966) also found that the greater the amount of feedback the greater the extent of change on self-selected change goals. And Harrison (1966) found that the amount of change in cognitive orientation was significantly related with member ratings of how members reacted to and utilized feedback during T-group sessions. (Those who made it easy for others to give feedback, and who tested the validity of feedback by seeking more, showed the most change). Thus it appears that provision for members to obtain and utilize feedback is one important factor in laboratory design.

In summary, then, it appears that the climate which develops in the training group, and the kind and/or extent of learning which occur, are influenced by the personality mix of the participants, the organizational relationships of the participants, and the way the design utilizes feedback. Studies involving the effect of length of the laboratory and of trainer behavior are inclusive.

In the previous section I indicated that currently there is controversy within the "fraternity" regarding whether the greatest payoff on the job results from labs which focus almost wholly on personal growth or from those which divide training time among personal growth, organizational problems, and planning for "backhome" changes. I know of no study where this question has been tested with sufficient rigor for meaningful conclusions to be drawn. Bunker and Knowles related their data to the issue, but since the laboratories they studies varied in length as well as in proportion of time spent in T-groups, the differences they found cannot be attributed to the design alone. Goldstein and I are studying two NTL summer labs, one consisting only of here-and-now activities and the other including back-home emphasis; while the evaluation design does not make it possible to derive clear conclusions, it appears that the two labs had differential impact on the subsequent performance of participants.

Wilson, Mullen, and Morton (1968) report results from a follow-up on two 6-day "off-site" laboratories, one of which utilized "the traditional sensitivity approach described by Weschler" and the other Morton's version of an instrumented laboratory. On the basis of self-reports obtained from the participants six months after the instrumented laboratory and 18 months after the "sensitivity" laboratory, the authors found that a very high and similar proportion of participants of the two laboratories reported that the experience was of value to them as individuals, while participants of the instrumented one showed significantly and substantially greater benefit as managers, as members of a

team, in building team effort in their organizations, and in communicating with others in the work setting. As the authors note, the study design was a weak one, but the findings were consistent with their predictions.

I have found no studies comparing laboratory training with rational training (Ellis and Blum, 1967), "motive acquisition" training (McClelland, 1965), or other forms of training. Yet there is certainly a need for such studies.

V Who learns from laboratory training?

In one of the more thorough analyses of "learning processes and outcomes", Miles (1965) explored a total of 595 relations among criterion, "home organization", "treatment", and personal variables. He found significant relations between on-the-job change and sex (males change more), job security (as measured by years as a school principal, the more secure participant changed more), and power (as measured by number of teachers supervised, the more powerful changed more); but he did not find significant differences between on-the-job change and age, ego strength (as measured by Barron's scale), flexibility (as measured by Barron's scale), need affiliation (as measured by French's Test of Insight), a combination of these three personality factors, autonomy on the job (as measured by infrequency of meetings with superior), perceived power in his work situation, perceived flexibility of his organization, and a combination of these organizational factors. On the other hand, he found that several of these factors were significantly related to the participant's behavior during the training (specifically with the extent to which the person "unfroze", and with the trainer's rating of the extent to which participants changed) - and these behaviors were in turn related to on-the-job changes.

Do other studies provide support for any of Miles' findings?

Unfortunately, as I have already indicated, there are few replications of studies in this field. I have found no other study which examined age or sex as a factor in learning from laboratories. With respect to personality, Rubin (1967) found that anomy (which as predicted, was itself uneffected by laboratory training) significantly influenced the extent of participant change in self-awareness and he found that change in self-awareness was a factor in the extent of change in acceptance of others. Harrison (1966) found no significant relation between pre-laboratory scores on "concrete instrumental" vs. "inferential-expressive" orientation and extent of change on this measure. He also found no relation between the pre-laboratory scores on this measure

and the participants' reactions to feedback during the laboratory - a finding which seems surprising if Harrison's theory about the importance of cognitive orientation is accurate.

In a study of classroom teachers, Bower and Soar (1961) found that increase in the teachers' use of group processes in the classroom following training was greatest for teachers who (a) were well adjusted and (b) who used group methods before receiving the training. Harrison and Oshry (1965) found that people who were seen as changing most in a T-group were those who were described by colleagues as open to the ideas of others, were accepting of others, and listened well. These two studies suggest that laboratory training develops further the interpersonal styles the participant comes with rather than reversing a pattern of behavior.

There is rather strong evidence that members who become involved in the T-group learn more than those who are ranked low on involvement (Bunker, 1965; Harrison and Oshry, 1966). While Miles did not find the relation between involvement and on-the-job change to be significant, he did find involvement significantly related to trainer ratings of the participants' effectiveness in the group, which was in turn significantly related to on-the-job change. Perhaps involvement in the training group is a function of the amount of dissonance produced - or of having "a castle and a battlefield", as Harrison suggests.

The direction research needs to take, in the tradition of the Miles' study, is exemplified by Smith (1966); using a complex model of training which was based on Kelman's model of influence, and using four separate measures of learning, Smith explored the relations among group climates (as indicated by the mix of member orientation, trainer styles, and types of influence underlying the trainer-participant interaction process) and types of learning. He found support for his predictions that (a) the compliant learning pattern, found among groups with authority-oriented members and trainers, showed highest learning in diagnostic ability, and (b) the "internalizing" learning pattern, found in groups with data-oriented members and a "people-oriented" trainer, showed the greatest favorable changes on FIRO-B scores and on interpersonal awareness. (This study was based on 31 T-groups, but since the groups varied in length, age and occupational background of members, etc., it is difficult to know the extent to which extraneous factors clouded the findings.)

Bunker and Knowles (1967) found that people attend human relations laboratories at Bethel who came from religious and governmental organizations showed significant change after a three-week laboratory but not after a two-week one, whereas people from industry, education and social service changed significantly after a two week session but the differences between it and the three week sessions were not significant. However, in this study the data on participants' background did not permit more than rough groupings so little confidence can be placed in these findings.

In summary, these studies provide some support for the prediction that sex, job security, organizational power, anomy of the participants, trainer-participant interaction patterns, the openness of the participant, and the participant's involvement in the T-group make a difference in how much the participant learns. But clearly this is an issue which merits much more systematic exploration.

VI Conclusions: Laboratory training in organization development

I think the evidence rather clearly indicates that laboratory training has a predictable and significant impact upon the majority of those who participate. Yet it is also clear that from the standpoint of organizational improvement, laboratory training by itself is not enough. In recognition of this several people have addressed themselves to facilitating "transfer of learning" (Winn, 1966; Bass 1967, Oshry and Harrison, 1966.) Bass has identified eight different approaches currently being tried as a means of increasing transfer. In varying degrees, these methods involve inclusion in the training of people and/or activities with which the participants are involved on the job while still retaining a focus on behavior in-the-here-and-now. Laboratory training systematically undertaken throughout the company, using combination of stranger, work, and interface groups, was a major intervention in STL's program (Davis, 1967), in Non-Linear Systems (Kuriloff and Atkins, 1966), and in a division of AlCan (Winn, 1966). And the indications are that in all three companies the development efforts are effective.

Several strategies, however, are more accurately described the other way around: laboratory training is one component of a multi-phased program. This seems to be the case in Harwood's revitalization of Weldon (Marrow, et al, 1967), in Beckhard's work with a large hotel company (Beckhard, 1966), in Blake's and Mouton's work (1968), and in several projects in school systems (Buchanan, 1968; Miles, et al, 1966). In all of these cases of organization

development it is difficult to assess how important the laboratory training was in the impact of the total program (and of course it is equally difficult to assess the effectiveness of the total program itself.) Not long ago (Buchanan, 1967) I examined the information available regarding eight cases of what I judged to be successful programs of organizational development and three which I judged to have been unsuccessful, in the hope of finding some "crucial issue". The use of laboratory training (or any other formal training) was not a crucial issue: neither of the two cases (Guest, 1962; Jaques, 1951) where there was the clearest evidence of success involved formal training. One of the issues which did emerge as crucial was the introduction into the system of new and more fruitful concepts in terms of which current problems of the organization were diagnosed and in terms of which improvement goals were set. Having new concepts for diagnosing current practices seemed to provide a means of getting from symptoms to variables having leverage for change; having new concepts for setting targets was important in working out clear "images of potentiality" and in developing dissonance and thus motivation for change.

I think the information which has become available since I made that study confirms my conclusions regarding the development of new concepts as a crucial issue in organization development. In a project of change in which I have recently been involved there was a difference in the outcome in the two school systems with which we worked. In analyzing the case reports on the two schools, the staff concluded that in the one which was the more effective, substantially more time was given to developing new concepts and skills of key participants before diagnosis and planning for system-change was undertaken (Buchanan, 1968). In the school system where there was more change, the superintendent had participated in an NTL laboratory, and he and the key members of the system took part in a one-week family laboratory; in the other system the superintendent did not have N T L experience, and he and his key staff had a two-day family laboratory. In two other cases or organizational development where there was little evidence of effectiveness (Benedict, et al., 1967; Miles, et al., 1966) diagnosis of current conditions in the system was undertaken before effort was made to develop new concepts. In contrast, in their new book which describes their "grid organizational development" strategy, Blake and Mouton (1968) continually stress that understanding of "grid theory" and the development of skills required in its application is an essential first step in each phase of their strategy. Blake and Mouton begin by exposing the key person in the target organization ot the managerial grid and to alternative styles of

management and their implications. This is followed with "seeding", a process of familiarizing a representative sample of people from the target system with the same concepts. Then all members of management are exposed to the same concepts - and only then are the needs diagnosed and improvement goals set by individuals, teams, and for the total target organization. A case study recently reported by Bartlett (1967), in which the development effort appeared to be successful, also involved development of new concepts and skills as the first step in the program.

Quite clearly formal training is one effective means for developing cognitive changes as an opening step in organizational development. At the same time, it is also clear that there are other means for doing this. The question, then is whether laboratory training - and, in fact, what kind of laboratory training - provides the most useful concepts and skills for this purpose. Answers to this question can be sought from two sources: from theories regarding effective organization functioning, and from outcomes of organizational development programs which utilize different methods for introducing new concepts and skills. While the latter method would be more convincing, at this time there is little such information available. So one must look to theory for support of the utility of laboratory training as a means of providing this crucial ingredient in programs of organizational development. As mentioned above, Shepard, Likert, Argyris, Bennis, and McGregor have provided such theory in the case of non-grid laboratory training, and Blake Mouton have made a case for grid-laboratory training. And Miles is systematically seeking empirical data which is relevant to the question as it pertains to school systems.

One can summarize this review of the literature regarding the value of laboratory training as follows:

1. It facilitates personal growth and development, and thus can be of value to the individual who participates.

2. It accomplishes changes in individuals which according to several theories are important in effecting change and in effectively managing organizations. This has been demonstrated in several cases of successful organizational development.

3. Studies comparing the value of laboratory with other types of training as a means of introducing concepts and skills in the first phase of organizational development are not available. The one study in which an instrumented laboratory was compared with sensitivity training provides some support for the instrumented approach.

4. The findings from this literature search are compatible with the conclusions reached in a similar review made four years ago.

FERKAUF GRADUATE SCHOOL
OF HUMANITIES AND SOCIAL SCIENCES

YESHIVA UNIVERSITY

REFERENCES

Argyris, C., "Explorations in Interpersonal Competence - I and II", J. Appl. Beh. Sci., 1965, I (1), 58-83; 1 (3), 255-269

Argyris, Chris, "On the Future of Laboratory Education", J. Appl. Beh. Sci., 1967, 3 (2), 153-183

Bartlett, Alton C., "Changing Behavior as a Means to Increase Efficiency", J. Appl. Beh. Sci., 1967, 3, (3) 381-403

_____, "Changing Behavior through Simulation: An Alternative Training Design", Train. and Develop. J., (in press)

Bass, B.M., "The Anarchist Movement and the T Group: Some Possible Lessons for Organizational Development", J. Appl. Beh. Sci., 1967 3, (2), 211-226

Benedict, Barbara, Paula Calder, Daniel Callahan, Harvey Hornstein, and Matthew Miles, "The Clinical-Experimental Approach to Assessing Organizational Change Efforts", J. Appl. Beh. Sci., 1967, 3, (3), 347-380

Bennis, W. G., CHANGING ORGANIZATIONS, New York: McGraw-Hill, 1966

Beckhard, Richard, "An Organization Improvement Program in a Decentralized Organization", J. Appl. Beh. Sci., 1966, 2, (1), 3-26

_____, "The Confrontation Meeting", 2, Har. Bus. Rev. 1967, 45 (2), 149-155

Blake, R.R., and Mouton, J.S., MANAGERIAL GRID, Houston: Gulf, 1964

_____, and Sloma, R.L., "The Union-Management Intergroup Laboratory: Strategy for Resolving Intergroup Conflict", J. Appl. Beh. Sc., 1965, 1 (1), 25-57

Blake, R.R. and J.S. Mouton, "Some Effects of Managerial Grid Seminar Training on Union and Management Attitudes Toward Supervision", J. Appl. Beh. Sci., 1966, 2, (4) 387-400

Blake, R.R. and J.S. Mouton., Barnes, L.B., and Greiner, L.E., "Breakthrough in Organization Development", Harv. Bus. Rev., 1964, 42 (6) 133-155

Blake, R.R., and Mouton, J.S., CORPORATE EXCELLENCE THROUGH GRID ORGANIZATION DEVELOPMENT, Houston: Gulf, 1968

Bolman, L.,

Buchanan, Paul C., "Evaluating the Effectiveness of Laboratory Training in Industry" Explorations in Human Relations Training, and Research, Report No. 1, 1965, Washington, D.C. N.T.L. - also in Fleishman, Edwin A. (Ed), STUDIES IN PERSONNEL AND INDUSTRIAL PSYCHOLOGY, Homewood, Ill.: Dorsey, 1967,(rev.Ed.), 237-250

Buchanan, Paul C., "Crucial Issues in Organizational Development", in Watson, G., (ed), CHANGE IN SCHOOL SYSTEMS, Washington, D.C.: National Training Laboratories, 1967, b

Buchanan, Paul C., "Reflections on a Project in Self-Renewal in Two School Systems", in Final Report, Cooperative Project in Educational Development, U.S.O.E. Contract 6-10-205, 1968.

Bugental, James, and Robert Tannenbaum, "Sensitivity Training and Being Motivation", J. Humanistic Psych., 1963, 76-85. (Also in Schein and Bennis, 1965, Ch. 6)

Bunker, D.R., "Individual Applications of Laboratory Training", J. Appl. Beh. Sci., 1965, 1 (2), 131-148

Bunker, D.R., and Knowles, E.S., "Comparison of Behavioral Changes Resulting from Human Relations Training Laboratories of Different Lengths", J. Appl. Beh. Sci., 1967, 3 (4), 505-524

Byrd, Richard E., "Training in a Non-Group", J. Humanistic Psychology, 1967, VII, (1), 18-27

Clark, J., and Culbert, S.A., "Mutually Theraputic Perception and Self-Awareness in a T Group", J. Appl. Beh. Sci., 1965, 1 (2), 180-194

Culbert, S.A., "The Interpersonal Process of Self-Disclosure: It Takes Two to See One", Explorations in Applied Behavioral Science, Washington, D.C.: NTL Institute Series, (in press).

Davis, Sheldon A., "An Organic Problem-solving Method of Organizational Change", J. Appl. Beh. Sci., 1967, 3, (1), 3-21

Deep, S., Bass, B., and Vaughan, J.A., "some Effects on Business Gaming of Previous Quasi-T-Group Affiliations", J. Appl. Psych., 1967, 51 (5), 426-431

De Michele, John H., The Measurement of Rated Training Changes Resulting from a Sensitivity Training Laboratory of an Overall Program in Organization Development, Unpublished doctoral dissertation, New York Univ., 1966.

Ellis, Albert, and Milton Blum, "Rational Training: A New Method of Facilitating Management and Labor Relations", Psych. Reports, 1967, 20, 1267-1284.

Fantini, Mario, and Gerald Weinstein, "Strategies for Initiating Educational Change in Large Bureaucratic School Systems", in Shostak, A.B. (Ed), SOCIOLOGY IN ACTION, Homewood, Ill.: Dorsey, 1966, pp. 22-32

Fleishman, E.A., Harris, E.F., and Burtt, H.E., LEADERSHIP AND SUPERVISION IN INDUSTRY, Columbus: Bureau of Educational Research, Ohio State University, 1955

French, J.R.P., Sherwood, J.J., and Bradford, D.L., "Change in Self-Identity in a Management Training Conference", J. Appl. Beh. Sci., 1966, 2 (2), 210-218

Friedlander, Frank, "The Impact of Organizational Training Laboratories upon the Effectiveness and Interaction of Ongoing Groups", Pers. Psych. 1967, 20, (3), 289-308

Golembiewski, Robert and Arthur Blumberg, "Confrontation as a Training Design in Complex Organizations: Attitudinal Changes in a Diversified Population of Managers", J. Appl. Beh. Sci., Vol. 3, No. 4, 1967, 525-547

Greiner, Larry E., "Antecedents of Planned Organization Change", 1967, J. Appl. Beh. Sci., 3, (1), 51-86

Greiner, L., "Organization Change and Development: A Study of Changing Values, Behavior, and Performance in a Large Industrial Plant", Unpublished doctoral dissertation, Harv. Bus. Sch., 1965

Guest, R., ORGANIZATIONAL CHANGE, Homewood, Ill.: Dorsey, 1962

Hampden-Turner, C.M., "An Existential 'Learning Theory' and the Integration of T-Group Research", J. Appl. Beh. Sci., 1966, 2, (4), 367-386

Harrison, Roger, "Group Composition Models for Laboratory Design", J.Appl.Beh.Sci., 1965, 1, (4), 409-432

_____, "Cognitive Models for Interpersonal and Group Behavior: A Theoretical Framework for Research", Explorations in Human Relations Training and Research, Report No. 2, 1965, Washington, D.C.: National Training Laboratories, NEA.

_____, "Problems in the Design and Interpretation of Research on Human Relations Training", Explorations in Human Relations Training and Research, NTL Inst. for Appl. Beh. Sci., Washington, D. C., Report No. One, 1967

Harrison R., and Lubin, B., "Personal Style, Group Composition, and Learning, J. Appl. Beh. Sci., 1965, 1 (3), 286-301

Harrison, Roger, and Barry Oshry, "The Design of One-week Laboratories", Subscription Series, No. 5, 1964, Washington, D.C.: National Training Laboratories, NEA. (Also in Schein, and Bennis, 1965, Ch. 5.)

Harrison, R., and Oshry, B., "The Impact of Laboratory Training on Organizational Behavior: Methodology and Results", Unpublished manuscript, NTL, Washington, D.C., 1966

House, Robert J., "'T Group' Training: Some Important Considerations for the Practicing Manager", N.Y. Pers. Mgmt. Ass'n Bull., 1965, 21, (9), 4-10.

_____, Manager Development: A Conceptual Model, Some Propositions, and a Research Strategy for Testing the Model, (mimeo, n.d.)

Jaques, E., THE CHANGING CULTURE OF A FACTORY, London: Tavistock 1951

Johnson, D.L., Hanson, P.G., Rothaus, P., Morton, R.B., Lyle, F.A., and Moyer, R., "Follow-up Evaluation of Human Relations Training for Psychiatric Patients", in Schein, E., and Bennis, PERSONAL AND ORGANIZATIONAL CHANGE THROUGH GROUP METHODS, New York: Wiley, 1965, p. 152-168.

Kassarjian, H., "Social Character and Sensitivity Training", J. Appl. Beh. Sci., 1965, 1 (4), 433-440

Kingsbury, Sherman, "An Open Letter to Chris Argyris", J. Appl. Beh. Sci., 3 (2), 1967, 186-200.

Knowles, Eric S., "A Bibliography of Research - Since 1960", Explorations in Human Relations Training and Research, Report No. 2, 1967, Washington, D.C., National Training Laboratories.

Kolb, D.A., Winter, S.K., and Berlew, D.E., "Self-Directed Change: Two Studies", J. Appl. Beh. Sci., in press

Kuriloff, A., and Atkins, S., "T Group for a Work Team", J. Appl. Beh. Sci., 1966, 2 (1), 63-93

Lakin, M., and Carlson, R., "Participant Perception of Group Process in Group Sensitivity Training", Int. J. Group Psychother., 1964, 14, 116-122

Leavitt, H., "Applied Organizational Change in Industry: Structural, Technological and Humanities Approaches" In J. G. Marsh (Ed) HANDBOOK OF ORGANIZATIONS, Chicago, Rand McNally, 1965, 1144-1170.

McClelland, David C., "Toward a Theory of Motive Acquisition", Amer. Psych., 1965, 20, (5), 321-333

McGregor, D., THE PROFESSIONAL MANAGER, New York: McGraw-Hill, 1967

Marrow, A., Bowers, D., and Seashore, S., PARTICIPATIVE MANAGEMENT

Medow, H., "Sensible Non-Sense", J. Appl. Beh. Sci., 1967, 3 (2) 202-203

Miles, M.B., "Learning Processes and Outcomes in Human Relations Training: A Clinical-experimental study", in Schein, E., and Bennis, W. (1965, 244-254)

_____, "Methodological Problems in Evaluating Organizational Change: Two Illustrations", paper read at Conference on Evaluating Organizational Change, Foundation for Research on Human Behavior, Cnchiota Conference Center, Tuxedo, N.Y., July 11 - 14, 1965

_____, Milavsky, J.R., Lake, D., and Beckhard, R., "Organizational Improvement: Effects of Management Team Training in Bankers Trust", Unpublished monograph, Personnel Div., Bankers Trust, New York, N.Y., 1965

_____, Paula Calder, Harvey Hornstein, Daniel Callahan, and Steven Schiavo, "Data Feedback and Organizational Change in a School System", (paper read at American Sociological Association meeting, August 29, 1966.)

Morton, R.B., and Bass, B.M., "The Organizational Training Laboratory", Train. Directors J., 1964, 18, 2-18

_____, and Wight, A., "A Critical Incidents Evaluation of an Organizational Training Laboratory", Unpublished manuscript, Aerojet Gen. Corp., Sacramento, Cal., 1964

Likert, Rensis, THE HUMAN ORGANIZATION, New York: McGraw-Hill, 1967

Oshry, B., and Harrison, R., "Transfer from 'Here-and-Now' to 'There-and-Then'". Changes in Organizational Problem Diagnosis Stemming from T-Group Training", J. Appl. Beh. Sci., 1966, 2 (2), 185-198

Powers, J.R., "Trainer Orientation and Group Composition in Laboratory Training", Unpublished doctoral dissertation, Case Inst. of Tech., 1965

Psathas, G., and Hardert, R., "Trainer Interventions and Normative Patterns in the T Group", J. Appl. Beh. Sci., 1966, 2 (2), 149-169

Rubin, I., "The Reduction of Prejudice through Laboratory Training", J. Appl. Beh. Sci., 1967, 3 (1), 29-50

Sarason, S., "The School Culture and Processes of Change", Brackbill Lectures, Univ. of Maryland, Jan. 10, 1966

Schein, E.H., and W.G. Bennis, PERSONAL AND ORGANIZATIONAL GROWTH THROUGH GROUP METHODS: THE LABORATORY APPROACH, New York: Wiley, 1965

Schmuck, R.A., "Helping Teachers Improve Classroom Group Processes", (mimeo., 1967)

Schutz, W.C., "An Approach to the Development of Human Potential", Subscription Service, Report No. 6, 1964, Washington, D.C.: National Training Laboratories, NEA.

Schutz, W.C., JOY, New York: Grove, 1967

Schutz, W., and Allen, V., "The Effects of a T-Group Laboratory on Interpersonal Behavior", J. Appl. Beh. Sci., 2 (3), 265-286

Shepard, H.A., "Changing Relationships in Organizations" in March, J.A., (Ed), HANDBOOK IN ORGANIZATIONS, Chicago, Rand McNally, 1965

Sikes, W., "A Study of Some Effects of a Human Relations Training Laboratory", Unpublished doctoral dissertation, Purdue, 1964

Smith, P.B., "Attitude Changes Associated with Training in Human Relations", Brit, J. Soc. Clin. Psychol., 1964, 3, 104-112

_____, "T-Group Climate, Trainer Style, and Some Tests of Learning", Unpublished manuscript, Sch. of Soc. Studies, Univ. of Sussex, England, 1966

Stephenson, R.W., Erickson, C. E., and Lehner, G.F.J., "Self-Perception Changes in a Sensitivity Training Laboratory", Explorations in Human Relations Training and Research, No. Five, 1965, Washington, D.C., NTL.

Tannenbaum, R., "Reactions to Chris Argyris", J.Appl.Beh. Sci., 1967, 3 (2), 205-6.

Tannenbaum, Robert, and James Bugental, "Dyads, Clans, and Tribe: A New Design for Sensitivity Training", NTL Training News, Vol. 7 (1963), 1-3

Whyte, W.F., and Edith Hamilton, ACTION RESEARCH FOR MANAGEMENT

Winn, Alexander, "Social Change in Industry: From Insight to Implementation", J.Appl.Beh.Sci. 1966, 2, (2), 170-185

Winter, S.K., Griffith, J.C., and Kolb, D.A., "The Capacity for Self-Direction", working paper 245-67, Sloan Sch. of Manag., MIT, 1967